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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/801,151	03/16/2004	Mitsuhiro Yamada	36856.1224	2177
7590	09/22/2004		EXAMINER	
Keating & Bennett LLP Suite 312 10400 Eaton Place Fairfax, VA 22030				ADDISON, KAREN B
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/801,151	YAMADA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Karen B Addison	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-12 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date: _____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>9/04</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: _____.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 9 are rejected under 35 U.S.C. 102(a) as being anticipated Wajima (6232699).

Wajima discloses the claim invention in fig.1- 17 including: a energy trap piezoelectric resonator in fig.1-17 comprising: a piezoelectric substrate(2) having a first(2a) and a second(2b) major surfaces that is polarized in a direction of the thickness between the first and second major surfaces; a first vibrating electrode(3) disposed on a portion of the first major surface of the piezoelectric substrate; a second vibrating electrode(4) disposed on a portion of the second major surface of the piezoelectric and facing the first vibrating electrode with the piezoelectric substrate interposed there between.

Wherein, each of the first and second vibrating electrodes has a substantially elliptical shape(fig.12a), and wherein a flattening ratio (a/b) represents the major axis diameter of the substantially elliptical shape electrode. Wherein, (A) represent the major axis and (B) represent s the minor axis diameter of the substantially elliptical shape electrode; and the first and second casing substrate (32,35) are respectively laminated on the top and bottom surfaces, wherein the vibrating cavities(31a) are provided between the first

vibrating electrode and the first casing substrate and between the second vibrating electrode and the second casing substrate. Wajima also disclose, the flatten ratio in a range of greater than 1 (col.10 line 24-37). Wherein the first extension electrode is connected to the first piezoelectric substrate and second extension electrode is connected to the second surface of the piezoelectric substrate. Wajima also disclose, the line width (fig.2) of each first and second extension electrodes narrower than the minor axis diameter of each of the first and second vibrating electrodes. Wajima also discloses the first and second casing substrates (32,35) (made of insulating ceramic) have recesses on the respective surfaces thereof facing the energy trap piezoelectric resonator to ensure that the vibration of a vibrating section having the first and second vibrating electrodes facing each other is not restricted. Wherein the energy trap resonator further comprise a first adhesive layer (9) between the first casing substrate and the piezoelectric resonator, and a second adhesive layer (9a) between the second casing substrate and the piezoelectric resonator, wherein the first and second adhesive Layers respectively bond the first and second casing substrates to the piezoelectric resonator, and each of the first and second adhesive Layers has a substantially rectangular frame (fig15; 9a,9b )and a vibrating section where the first and second vibrating electrodes face each other is arranged within openings of the substantially rectangular frames. Wajima also disclose the frame shape-damping member (8)made of epoxy) arranged on the periphery of at least one of the major surfaces of the piezoelectric substrate.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claim10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wajiam.

Wajiam substantially discloses the claim invention, However, Wajiam does not discloses the that damping material has a higher elastic modules than the first and second adhesive layer, and the thickness of the damping layer being 40  $\mu\text{m}$  or more.

It would have been obvious to one having ordinary skill in the art at the time the invention was to select the damping layer to have a thickness in a range of 40  $\mu\text{m}$  or more, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. IN re Aller, 105 USPQ 233

It also would have been obvious to select a material for the damping layer to have a higher elastic modulus than that of the first and second adhesive layer, since it has been held to be within the ordinary skill in the art to select a material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B Addison whose telephone number is 571-272-2017. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on 571-272-2204. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

*KBA*  
9/13/04

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